UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

ESTIMATING MARKET RISK OF STOCK PORTFOLIO USING VALUE AT RISK (VAR) & CONDITIONAL VALUE AT RIK (CVAR)

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In the name of Allah, The most Gracious, The Most Merciful

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ABSTRACT

Investing is the most efficient way for investors to increase their wealth. In Malaysia, there are several types of investment vehicles available, such as property, unit trust, stocks, fixed deposit and gold investment. This research focuses on stocks also known as equity or share investment. Risk and return are two important criteria need to be considered by the investors or shareholder in constructing an optimal portfolio. Previously, the risk was being measured using standard deviation whereby the value lies between zero to one. Therefore, this research adapts Value at Risk (VaR) and Conditional Value at Risk (CVaR) models in measuring monthly market risk of stocks portfolio at 95% confidence level. In normal market condition, VaR is defined as the maximum potential loss, while CVaR described the average predicted loss of a portfolio over a defined period for a given confidence interval. In each model, there are two methods used in this study, which are Historical Simulation and Monte Carlo Simulation. The empirical result shows that the accuracy for VaR and CVaR model is 6.9% and 8.64% respectively. This indicates that VaR and CVaR are successfully been implemented in measuring monthly risk of a stocks portfolio. The empirical results show that VaR is the best model to estimate risk as the overall MAPE is lower as compared to CVaR model with 6.9% and 8.64% respectively. By knowing the risks, eventually investors will be in a better position in making any decisions regarding their investment using VaR and CVaR models.